

# Prevalence of Psychoactive Substances Use and Obstetric Complications in Pregnant Women Assisted in Primary Care

Prevalência do Uso de Substâncias Psicoativas e Complicações Obstétricas em Gestantes Assistidas na Atenção Primária  
Prevalencia del Consumo de Sustancias Psicoactivas y Complicaciones Obstétricas en Mujeres Embarazadas Atendidas en Atención Primaria

## RESUMO

**Objetivo:** verificar a prevalência do uso de substâncias psicoativas e as complicações obstétricas decorrentes do uso em gestantes assistidas na Atenção Primária à Saúde. **Método:** estudo transversal analítico, realizado com prontuários eletrônicos de mulheres gestantes, assistidas em um serviço da Atenção Primária de um município do interior do Rio Grande do Sul. A coleta de dados ocorreu em 2023, identificando 162 prontuários de gestantes que atendiam aos critérios estabelecidos. Realizou-se análise descritiva dos dados a partir de variáveis categóricas em forma percentual e as quantitativas em média e, para verificar a prevalência, aplicou-se o teste qui-quadrado. **Resultados:** as gestantes que fizeram o uso de tabaco tiveram parto prematuro cerca de duas vezes mais em relação às mulheres que não usaram. **Conclusão:** compreende-se a necessidade de facilitar o acesso de gestantes ao pré-natal e promover ações educativas acerca dos riscos associados ao uso de substâncias durante a gestação.

**DESCRIPTORIOS:** Gravidez; Uso de tabaco; Consumo de bebidas alcoólicas; Epidemiologia.

## ABSTRACT

**Objective:** To determine the prevalence of psychoactive substance use and obstetric complications resulting from its use in pregnant women receiving primary health care. **Method:** An analytical cross-sectional study conducted with electronic medical records of pregnant women receiving primary health care in a municipality in the central region of Rio Grande do Sul. Data collection took place in 2023, identifying 162 medical records of pregnant women who met the established criteria. A descriptive analysis of the data was performed using categorical variables as percentages and quantitative variables as means. The chi-square test was used to determine prevalence. **Results:** Pregnant women who used tobacco had a preterm birth approximately twice as often as women who did not use tobacco. **Conclusion:** The need to facilitate pregnant women's access to prenatal care and promote educational activities regarding the risks associated with substance use during pregnancy is clear.

**DESCRIPTORS:** Pregnancy; Tobacco use; Alcohol consumption; Epidemiology.

## RESUMEN

**Objetivo:** Determinar la prevalencia del consumo de sustancias psicoactivas y las complicaciones obstétricas derivadas de su consumo en embarazadas que reciben atención primaria de salud. **Método:** Estudio transversal analítico realizado con historias clínicas electrónicas de embarazadas que reciben atención primaria de salud en un municipio de la región central de Rio Grande do Sul. La recolección de datos tuvo lugar en 2023, identificándose 162 historias clínicas de embarazadas que cumplieron con los criterios establecidos. Se realizó un análisis descriptivo de los datos utilizando variables categóricas como porcentajes y variables cuantitativas como medias. Se utilizó la prueba de chi-cuadrado para determinar la prevalencia. **Resultados:** Las embarazadas que consumieron tabaco tuvieron un parto prematuro aproximadamente el doble de veces que las mujeres que no consumieron tabaco. **Conclusión:** Es evidente la necesidad de facilitar el acceso de las embarazadas a la atención prenatal y promover actividades educativas sobre los riesgos asociados al consumo de sustancias durante el embarazo.

**DESCRIPTORIOS:** Embarazo; Consumo de tabaco; Consumo de bebidas alcohólicas; Epidemiología

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## INTRODUCTION

Pregnancy is a period that involves significant changes in women's physical, psychological, social, and family aspects<sup>(1)</sup>. The experience of carrying a child is emotionally intense, filled with feelings that can be complex, even when it occurs under normal conditions<sup>(2)</sup>.

In relation to pregnancy, the consumption of psychoactive substances (PAS) by pregnant women represents a negative impact factor in this trajectory<sup>(3)</sup>. It should be noted that PAS can be classified as legal or illegal, depending on their legal authorization for consumption. Among the legal substances are tobacco and alcohol, which are the most commonly used by pregnant women. It is known that the estimated prevalence of PSS use in Brazil is higher than the global average. In a survey conducted in 2012, it is estimated that about 15.2% of pregnant women consumed alcoholic beverages and 9.6% were smokers<sup>(7)</sup>.

Therefore, it can be said that tobacco and alcohol consumption by pregnant women represents a significant challenge to maternal-fetal health, as it interferes with the physiological functioning of the body and can trigger diseases and adverse obstetric complications. Among the possible consequences are congenital anomalies, premature birth, and, in more severe cases, fetal or maternal death<sup>(8-10)</sup>.

To prevent complications, prenatal care is offered through Primary Health Care (PHC). This includes a variety of interventions and care for pregnant women, with the aim of promoting a healthy process, preparing the mother for childbirth and postpartum, and identifying and managing possible complications, including those related to the use of PAS<sup>(11)</sup>.

Given the above, it is necessary to

understand the extent of this problem and identify which groups of pregnant women are most vulnerable to SPA use. Thus, it is essential to develop research that assesses the prevalence of substance use, especially alcohol, during pregnancy, so that public policies can be designed to address this issue in the prenatal period, as well as to screen and increase pregnant women's access to health services<sup>(12)</sup>. Thus, the present study aims to verify the prevalence of psychoactive substance use and the obstetric complications resulting from such use in pregnant women assisted in Primary Health Care.

## METHOD

This is a cross-sectional analytical study based on the electronic medical records of pregnant women assisted by a Family Health Strategy (ESF) unit, part of the PHC system in a municipality in the interior of Rio Grande do Sul. The steps suggested by the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) checklist were followed in preparing the report.

Data collection was carried out in 2023 by academics and doctors in Nursing. For data selection, the following inclusion criteria were considered: medical records of pregnant women aged 18 years or older who underwent prenatal care at the ESF and gave birth between 2020 and 2022.

Initially, to identify the pregnant women, a list generated by the ESF electronic information system was consulted, which contained basic information from the medical records of users monitored by the service. Thus, 162 medical records of pregnant women who met the established criteria were identified.

For data collection, a sociodemographic questionnaire was used con-

taining the following variables: age, education, race/color, occupation, employment status, marital status, type of SPA consumption, and whether or not they suffered obstetric complications during pregnancy. Complications were predefined as hemorrhage, premature birth, and late birth. The data were double-entered into an Excel® spreadsheet and then transferred to the Statistical Package for the Social Sciences (SPSS) software, version 25.

Thus, to characterize the sample, a descriptive analysis of the medical record data was performed, with categorical variables presented as percentages and quantitative variables as means, maximum and minimum standard deviations. To evaluate the factors associated with the prevalence of SPA use with obstetric complications, the chi-square test was applied. Associations were considered significant when the results showed a p-value < 0.05.

The research was approved by the Research Ethics Committee under opinion No. 5.183.201 and CAAE 54327821.0.0000.5306. In addition, it followed the ethical precepts of Resolution No. 466/12 of the National Health Council.

## RESULTS

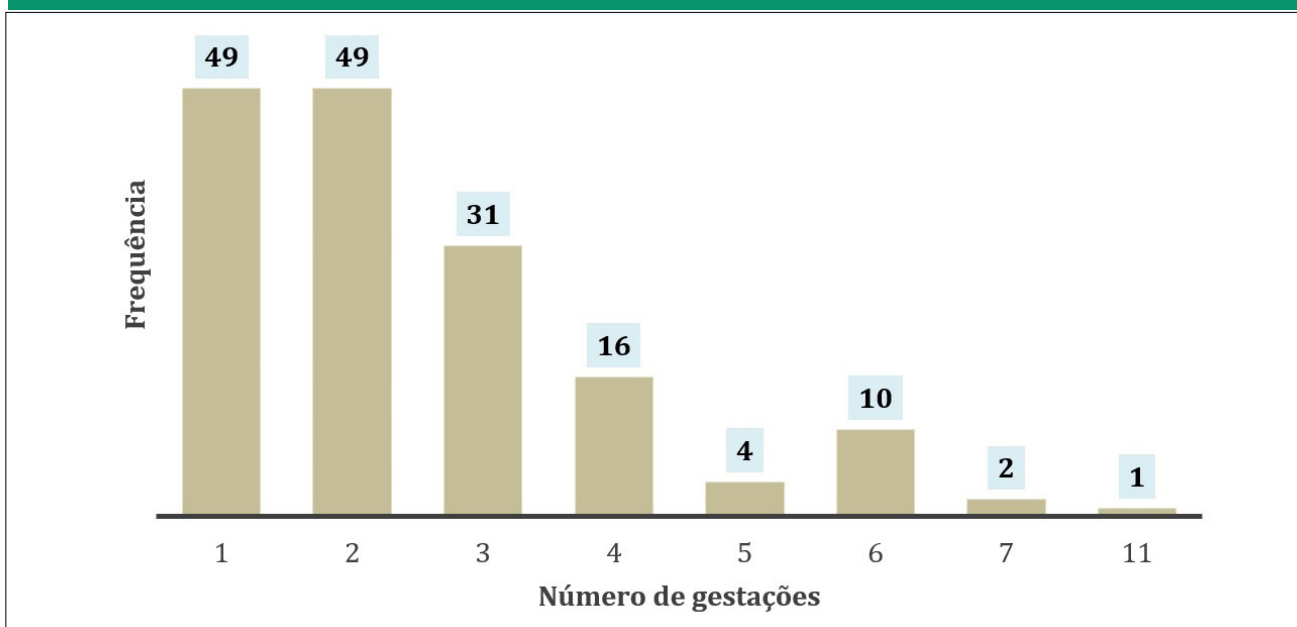
The average age of the pregnant women was 28.1 years, with the majority self-identifying as white (82.1%). In terms of education, the majority had completed elementary school (67.1%), followed by high school (27.3%) and higher education (5.6%). Most were married or in a stable relationship (40.7%), and their employment status was not reported in the medical records (43.9%). Most did not have information about social benefits (76.4%), as shown in Table 1.

Table 1 - Sociodemographic characteristics of pregnant women.

Variables	Results
Age (mean±SD) (minimum - maximum)	28.1±7 (13-46 years)
Race/color	No. (%)
White	133 (82.1%)
Non-white	29 (17.9%)
Education	No. (%)
Elementary	108 (67.1%)
High school	44 (27.3%)
Higher education	9 (5.6%)
Marital status	No. (%)
Single	40 (24.7%)
Married/Cohabiting	66 (40.7%)
Not reported	56 (34.6%)
Employment status	No. (%)
Yes	25 (15.4%)
No	66 (40.7%)
Not reported	71 (43.9%)
Social benefit	No. (%)
Brazil Aid	38 (23.6%)
Not reported	123 (76.4%)

Regarding the number of pregnancies, as shown in graph 1. Thus, the average is 2.5 pregnancies per woman, of which 160 were single pregnancies (98.8%) and two (1.2%) were twin pregnancies.

Graph 1 - Proportion of pregnant women by number of pregnancies.



Among the 162 medical records, 32 indicated that the pregnant women used tobacco and 12 indicated alcohol use.

Table 2 shows the association between tobacco use and some obstetric complications.

**Table 2 - Association between tobacco use and obstetric complications.**

Obstetric complications	Tobacco use		p
	Yes	No	
<b>Hemorrhage</b>			
Yes	0 (0%)	4 (3.6%)	0,301
No	32 (100%)	119 (96.7%)	
<b>Premature birth</b>			
Yes	2 (6.2%)	11 (8.9%)	0,624
No	30 (93.8%)	112 (91.1%)	
<b>Late delivery</b>			
Yes	3 (9.4%)	6 (4.9%)	0,333
No	29 (90.6%)	117 (95.1%)	

There was no association between tobacco use and cases of hemorrhage, premature birth, and late birth. When analyzing the complication "hemorrhage," it was observed that 32 parturients who used tobacco did not present hemorrhage, while 3.3% did not use this substance and had the complication.

It was found that pregnant women who used tobacco had premature births about twice as often as women who did not use tobacco (OR = 2.017). The same was observed in relation to pregnant women who used tobacco compared to those who did not use tobacco and still had late deliveries, as shown in Table 3.

**Table 3 - Association of alcohol use with obstetric complications.**

Obstetric complications	Alcohol use		p
	Yes	No	
<b>Hemorrhage</b>			
Yes	0	4 (2.8%)	0,557
No	12 (100%)	139 (97.2%)	
<b>Premature birth</b>			
Yes	1 (8.3%)	12 (8.4%)	0,994
No	11 (91.7%)	131 (91.6%)	
<b>Late delivery</b>			
Yes	0 (0%)	9 (6.3%)	0,371
No	12 (100%)	134 (93.7%)	

There was no association between alcohol consumption and cases of hemorrhage (p=0.557), premature birth (p=0.994), and late birth (p=0.371). In the analysis of hemorrhage, it was noted that the parturients who consumed alcohol<sup>(12)</sup> did not present hemorrhage, while those who did not consume alcohol (four) had this complication.

**DISCUSSION**

The results regarding the average age of pregnant women (28.1 years) converge with the results of other studies<sup>(5;7;13;10)</sup> conducted. Despite this, it is noteworthy that the age of onset of SPA use has been shown to be early, suggesting adolescence as a decisive risk factor for developing such behavior<sup>(5)</sup>.

It was evident that women with a higher prevalence of SPA use, related to obstetric complications, are predominantly white, with lower levels of education and with a partner, without mentioning whether they have a job or receive social assistance. In this regard, the data on race/color and having a partner differ from those found in the literature, which states that they are commonly black and without a partner<sup>(10;14-15)</sup>. Furthermore, married women tend to smoke less compared to those with other marital statuses<sup>(16)</sup>.

With regard to education, one possible reason for the higher consumption of PAS among pregnant women with lower levels of education is the lack of access to information about the harmful effects of this habit. Research<sup>(17)</sup> showed a higher prevalence of alcohol consumption during pregnancy, especially among women with lower levels of education, which can be attributed to a lack of knowledge and poor access to information, in addition to the cultural acceptance of the consumption of legal substances. Another study<sup>(10;14)</sup> confirms the in-

formation that pregnant women with lower levels of education have a high frequency of alcohol consumption and tobacco use.

Although the majority (43.9%) of medical records did not contain information about the pregnant women's employment status, the second highest prevalence was among women who were not employed (40.7%). This data is consistent with the results of a study<sup>(10)</sup> that analyzed the prevalence of alcohol use between 2011 and 2012 in Brazil, which points to a higher prevalence of tobacco and alcohol use among pregnant women who were more socially vulnerable and from lower economic classes. This fact may be associated with the challenges these women face in accessing prenatal care and difficulties in adhering to health promotion actions.

With regard to the number of pregnancies, the results revealed a predominance of multiparous women. Studies<sup>(5,6)</sup> have shown that multiparous women have a higher prevalence of SPA use compared to women who have fewer children. It can be assumed that this behavior is related to unplanned pregnancies<sup>(5)</sup>.

Regarding the association between tobacco use during pregnancy and obstetric complications, the results indicated that pregnant women who used tobacco were approximately twice as likely to give birth prematurely compared to women who did not use tobacco. Furthermore, there was no association between alcohol use and cases of hemorrhage, premature birth, or late birth. Although this study did not find an association between tobacco use and obstetric complications, it is known that these complications are significantly related to the use and abuse of PAS, constituting a public health problem<sup>(13;18-19)</sup>.

Active and passive smoking, as well as alcohol consumption during

pregnancy, are known to be associated with a higher incidence of premature birth. Furthermore, pregnant women whose spouses were smokers had an increased risk of premature birth<sup>(20)</sup>. Active pregnant smokers had a lower gestational age at delivery compared to women passively exposed to smoke and non-smokers<sup>(21)</sup>.

Regarding alcohol use, there was no association with obstetric complications such as hemorrhage, premature birth, and late delivery. Furthermore, the results showed that pregnant women who did not use the substance experienced hemorrhage. Although this was the result, it is understood that alcohol has a teratogenic effect and can cause damage throughout pregnancy, depending on the amount consumed, genetics, and maternal nutrition. Its use can result in physical and/or mental damage, miscarriage, fetal brain damage, and fetal alcohol syndrome<sup>(18;22)</sup>, as well as sleep difficulties, attention and language disorders, behavioral problems, and cognitive disorders<sup>(23)</sup>, higher incidence of gestational diabetes mellitus, hypertensive disease, and hemorrhagic syndromes<sup>(24)</sup>. Thus, it is understood that there is a statistically significant association between alcohol consumption and pregnancy complications<sup>(6)</sup>.

It is noteworthy that pregnant women with insufficient prenatal consultations had a higher prevalence of alcohol consumption during pregnancy, which indicates fewer opportunities to receive guidance on the risks of this behavior during the period<sup>(10)</sup>. Thus, it is understood that the role of health professionals in conducting prenatal consultations with SPA users is challenging, as it requires recognizing use, providing guidance, and providing adequate care to pregnant women<sup>(25)</sup>. To this end, it is necessary to establish a bond with pregnant women so that they feel welcome and increase adherence to prenatal care<sup>(5)</sup>.

Finally, it is considered that the limitation of the research is related to possible underreporting in medical records regarding the use of PAS. Despite this, the data found are relevant, as they contribute to the production of epidemiological data on the use of PAS by pregnant women, especially tobacco and alcohol, and their association with obstetric complications.

## CONCLUSION

The study made it possible to verify the prevalence of PAS use and the obstetric complications resulting from their use in pregnant women assisted in PHC. It was found that pregnant women who used tobacco had premature births about twice as often as women who did not use tobacco.

It should be noted that alcohol and tobacco consumption represent a significant risk factor for pregnancy. Therefore, it is essential to avoid their use during pregnancy, as there is no evidence regarding safe consumption levels.

Given the above, there is a clear need to facilitate access to prenatal care for pregnant women and to promote educational initiatives on the risks of using PAS during pregnancy. To this end, healthcare professionals should address this issue in a welcoming and informative manner, encouraging users to adhere to care measures during pregnancy.

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